Cahiers de géographie du Québec

Burnett, John H. (ed.). *The Vegetation of Scotland*. Edinburgh and London, Oliver and Boyd, 1964, 614 pages.

David Watts

Volume 11, numéro 22, 1967

URI : https://id.erudit.org/iderudit/020712ar
DOI : https://doi.org/10.7202/020712ar

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Éditeur(s)

Département de géographie de l'Université Laval

ISSN

0007-9766 (imprimé)
1708-8968 (numérique)

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Citer ce compte rendu

Watts, D. (1967). Compte rendu de [Burnett, John H. (ed.). *The Vegetation of Scotland*. Edinburgh and London, Oliver and Boyd, 1964, 614 pages.] *Cahiers de géographie du Québec*, *11*(22), 156–157. https://doi.org/10.7202/020712ar

plants which grow predominantly north of latitude 30° North. The key is easy to follow, being dichotomous throughout, and the book is pocket-sized, both useful features for the field workers.

For those not too familiar with techniques of plant identification, short sections explain the major vegetative and floral characteristics of plants, and the taxonomic significance of certain terms, particularly those relating to the relative positions of floral organs, and placentation. Summaries of the characteristic features of each genus, and their geographic distribution, are also included, together with well-chosen diagrams, a glossary of technical botanical terms, and a pertinent bibliography.

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BURNETT, John H. (ed.) **The Vegetation of Scotland.** Edinburgh and London, Oliver and Boyd, 1964, 614 pages.

All vegetation studies in Scotland owe a great deal to the pioneer phytosociological work of Robert Smith, dating from the turn of the present century. It was he who first introduced to that country the idea of change from a purely phytogeographical or regional approach towards vegetation studies to a more strictly ecological approach, through developing an emphasis on such important facets of the physical environment as elementary food and energy relationships, the influence of the biotic factor, the relationships between species, and so on — as well as attempting to refine the delimitation of factors which cause geographical variation between vegetation communities. In *The Vegetation of Scotland*, Professor Burnett acknowledges his debt to Smith, and to later analytical research by Poore, whose attempt with McVean in 1957 to relate Scottish Highland communities with European continental equivalents was based on techniques developed from Braun-Blanquet and Nordhagen. But in itself the book under review represents a significant advance over all previous vegetation studies of Scotland inasmuch as it brings a more complete analysis of major communities and sub-communities, and their relationships with continental equivalents, than anything which has hitherto been attempted. It is especially important in providing for each community synoptic floristic tables giving dominants and constants where they are known, in describing community distribution, and the related altitudinal and edaphic ranges, and in giving the relationships between each community and other similar communities (especially in Scandinavia), and their respective ecological histories.

Following an introductory chapter by Professor Burnett, the book is organised into three major divisions. The first of these consists of two chapters on the physical environment, one on climate written by F. H. W. Green, and the other on soils by E. A. Fitzpatrick. Climatic influences such as rainfall distribution, temperature variations, wind and snowfall patterns, and the effects of exposure, are analysed in detail, together with the important hydrological considerations of totals of potential evapotranspiration, and the distribution of areas with an annual potential water deficit. The two latter features, which are not always noted in ecological treatises, are dealt with adequately, if not at length, and passing note is made of the restriction not only of certain communities but also of certain plants (e. g. *Drosera anglica*) to areas of annual potential water deficit. Soil morphology and development is analysed according to a synoptic classification based on recent research completed by continental workers such as Kubiëna, Mückenhausen, Duchaufour, and Tavernier.

A series of chapters on the major vegetation communities of Scotland comprises the second, and major division of this book. C. H. Gimingham writes on the maritime communities and dwarf shrub heaths, D. N. McVean on the montane zone, and on woodland and scrub associations, J. King and I. A. Nicholson on grasslands within the forest and sub-alpine zones, A. J. Brook and D. H. N. Spence on the lowland acquatic communities, D. A. Ratcliffe on mire and bog vegetation. Each of these is analysed in detail by means of using phytosociological techniques, and additional specific references are made to further areas or topics of particular importance, e. g. those areas of old forest and woodland which still exist ; the Culbin sands area ; the nutrient balance and hydrological considerations of vegetation succession in grassland areas ; the relationships between dwarf-heaths on both sides of the North Sea ; and so on.

Following this, the book is concluded by a third division written by D. N. McVean, consisting of two chapters, which summarise the ecological history and pre-history of the Scottish vegetation communities, and regional variations in the pattern of vegetation.

For biogeographers and all those interested in the physical environment of Scotland, this is a new reference book of major importance, for it helps in many ways to bridge the narrow gap which sometimes exists between strictly ecological research, and that more directly concerned with the physical aspects of geographic study ; in particular, the close inter-relationships between hydrology, soils and vegetation are clearly revealed. It also serves as a significant introduction to certain new ideas of European phytosociological research, more especially to those who may not read French or German fluently. Finally it is of course a major new source of information concerning Scottish vegetation communities.

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LA VÉGÉTATION DE LA SUÈDE

The Plant Cover of Sweden. A study dedicated to G. Einar DU RIETZ on his 70th birthday, April 25th, 1965 by his pupils. *Acta Phytogeogr. Suec., 50* : 1-314, 1965, 157 fig., 9 tab., 20×27 cm. Broché, 72.00 Sw. Kr. ; relié, 87.00 Sw. Kr.

Ce 50e volume des *Acta Phytogeographica Suecica*, dédié au professeur Du Rietz, fondateur de l'École phytosociologique d'Uppsala, réunit 43 articles et une abondante bibliographie consacrés à la végétation de la Suède. Les contributions sont regroupées sous quatre titres : 1° considérations régionales ; 2° aspects de la Suède méridionale ; 3° aspects de la Suède boréale ; 4° passé et présent.

La première partie (84 pages) débute par un article d'introduction sur les paysages et le climat de la Suède, suivi des vues d'ensemble sur la végétation marine, la végétation des lacs, des régions forestières, des montagnes de la Laponie et de l'étage alpin des montagnes du sud.

Les études sur la végétation méridionale, réunies dans la deuxième partie du volume (81 pages), couvrent les divers aspects de la végétation marine et littorale, celle des landes du sud-ouest, des forêts, de la plaine, des tourbières et des pré-bois du Västergötland.

La troisième partie (101 pages) comporte les travaux concernant la végétation du nord de la Suède. Écologie des tourbières, flore et végétation aquatique et terrestre, paysages botaniques de la Laponie, associations végétales montagnardes et alpines. Tels sont les principaux sujets traités par les auteurs.

Quant à la quatrième partie (25 pages), elle contient les études concernant les problèmes touchant à l'histoire postglaciaire et à l'évolution récente du tapis végétal de la Suède, cette dernière due aussi bien à l'action des animaux qu'à celle de l'homme.

Enfin, une bibliographie de 936 références termine cet ouvrage monumental, magnifiquement illustré, que nous recommandons à tous ceux qu'intéresse la géographie végétale des pays tempérés froids et, en particulier, celle de la Suède.

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NEIGE, GLACE, GLACIERS

ARMSTRONG, Terence, ROBERTS, Brian, SWITHINBANK, Charles. **Illustrated Glossary of Snow and Ice.** Scott Polar Research Institute, Special publication, 4, Cambridge, 1966, 60 pages, 79 illustrations.

Le *Scott Polar Research Institute*[1] vient de republier son dictionnaire illustré de la glace dont les premières listes de mots remontent à 1944. Même si la dernière édition élargit considérablement celle de 1956 publiée dans *The Polar Record*, il ne s'agit pas d'une œuvre qui veut rejoindre tous les termes ; l'on a préféré s'en tenir à un vocabulaire minimum mais essentiel.

[1] *Cahiers de géographie de Québec*, 17, 1965, pp. 97-100.